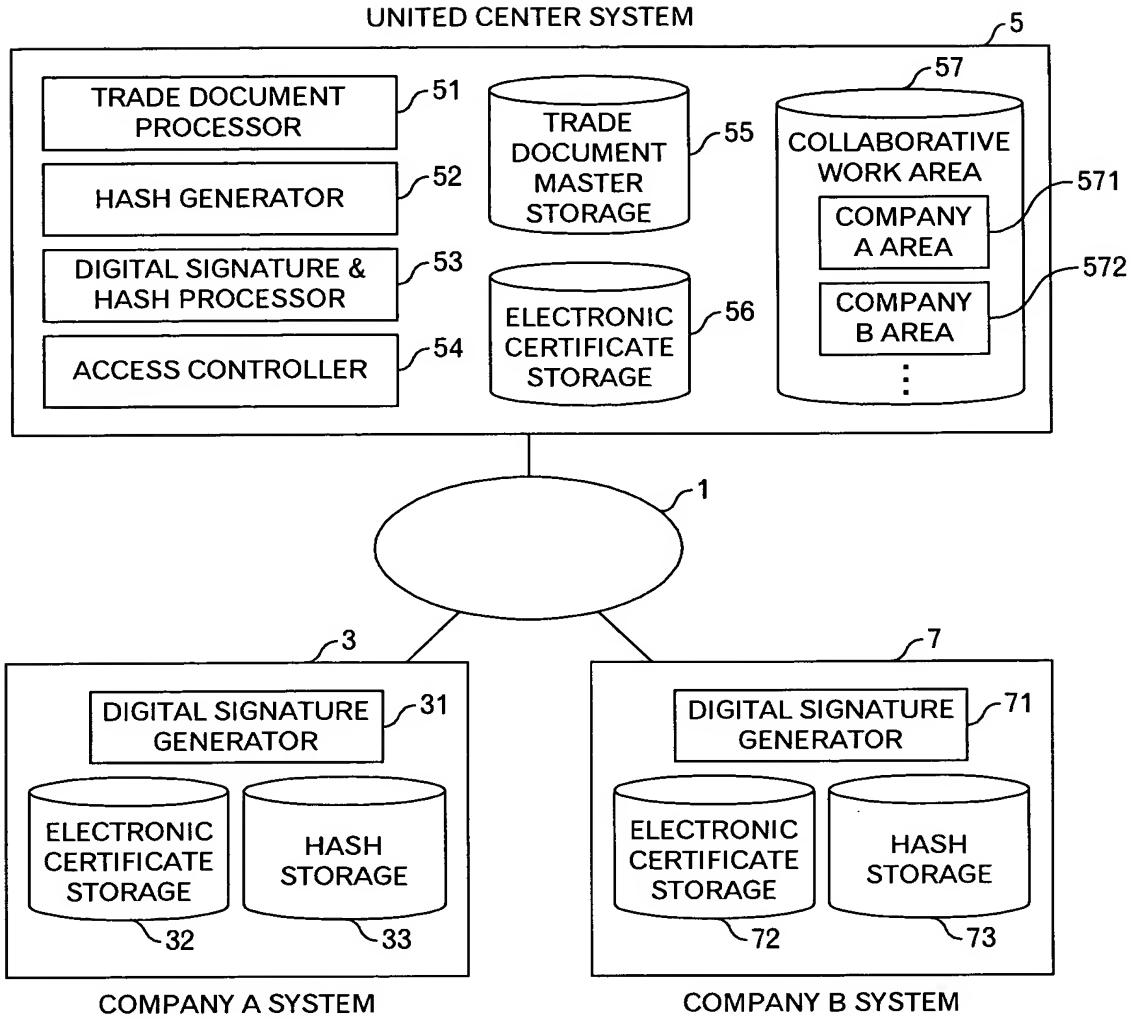

UNITED CENTER SYSTEM
5
TRADE DOCUMENT PROCESSOR
51
HASH GENERATOR
52
DIGITAL SIGNATURE & HASH PROCESSOR
53
ACCESS CONTROLLER
54
TRADE DOCUMENT MASTER STORAGE
55
ELECTRONIC CERTIFICATE STORAGE
56
57
COLLABORATIVE WORK AREA
571
COMPANY A AREA
572
COMPANY B AREA
1
3
DIGITAL SIGNATURE GENERATOR
31
ELECTRONIC CERTIFICATE STORAGE
32
HASH STORAGE
33
COMPANY A SYSTEM
7
DIGITAL SIGNATURE GENERATOR
71
ELECTRONIC CERTIFICATE STORAGE
72
HASH STORAGE
73
COMPANY B SYSTEM

FIG.1

FIG.2A

201 ELECTRONIC CERTIFICATE IDENTIFIER	202 OWNER INFORMATION OF ELECTRONIC CERTIFICATE
A99999999	aaaaa, aaaaaaaa, aaaaaa
ASP99999999	bbbbb, bbbbbbbb, bbbbbb
B99999999	ccccc, cccccccc, cccccc
⋮	⋮

FIG.2B

203 ELECTRONIC CERTIFICATE IDENTIFIER	204 PRIVATE KEY INFORMATION
A99999999	0101010101・・・

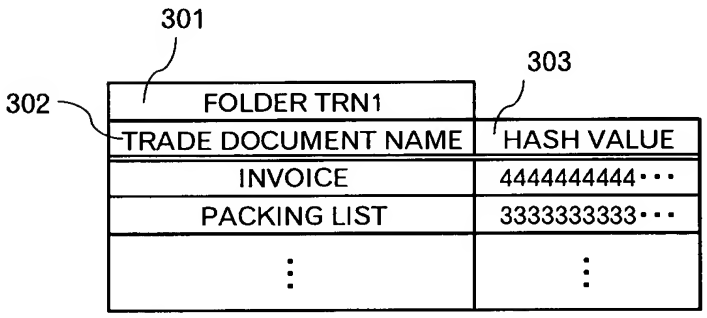


FIG.3

FIG.4A

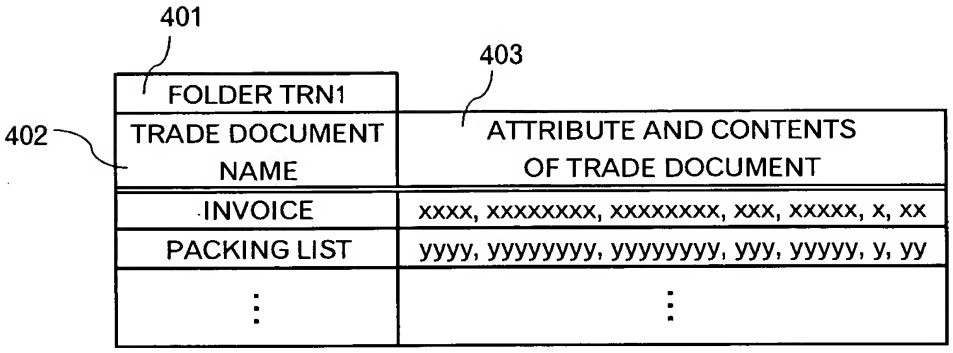


FIG.4B

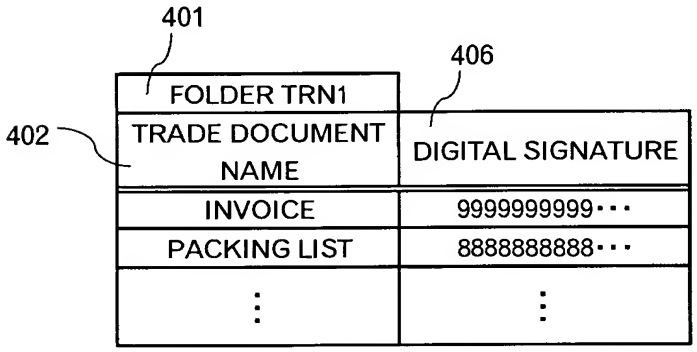
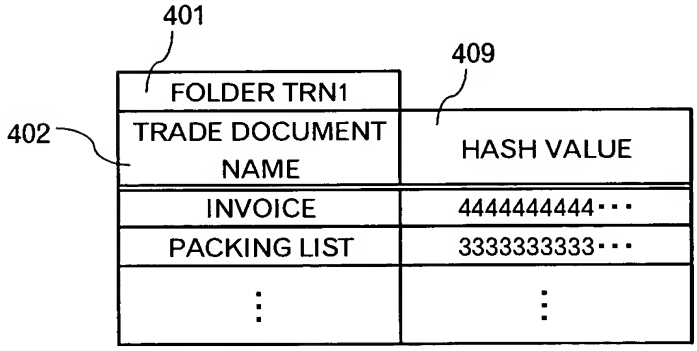


FIG.4C



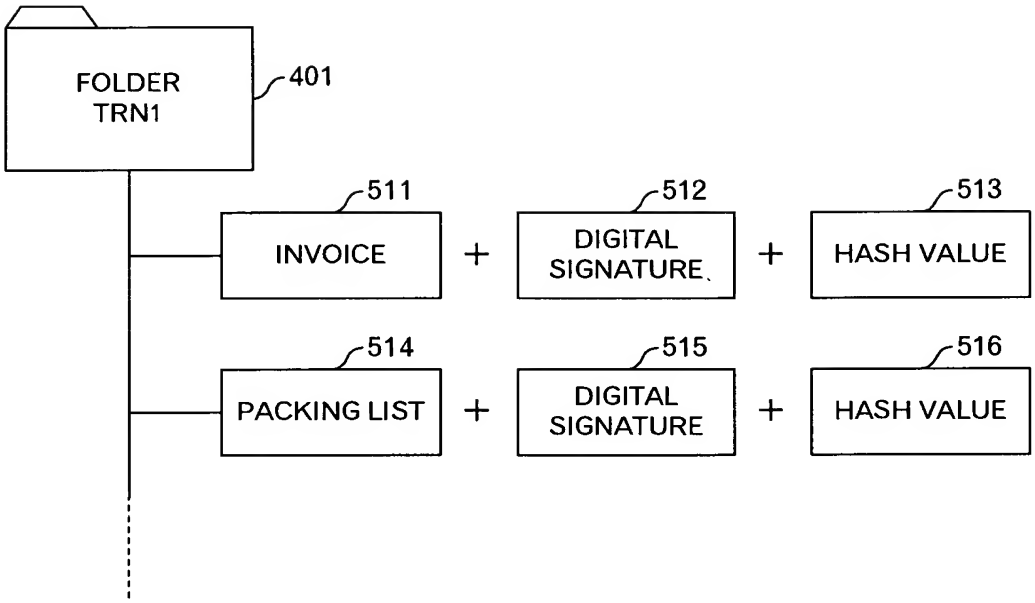

FOLDER
TRN1
401
511
INVOICE
+
512
DIGITAL
SIGNATURE
+
513
HASH VALUE
514
PACKING LIST
+
515
DIGITAL
SIGNATURE
+
516
HASH VALUE

FIG.5

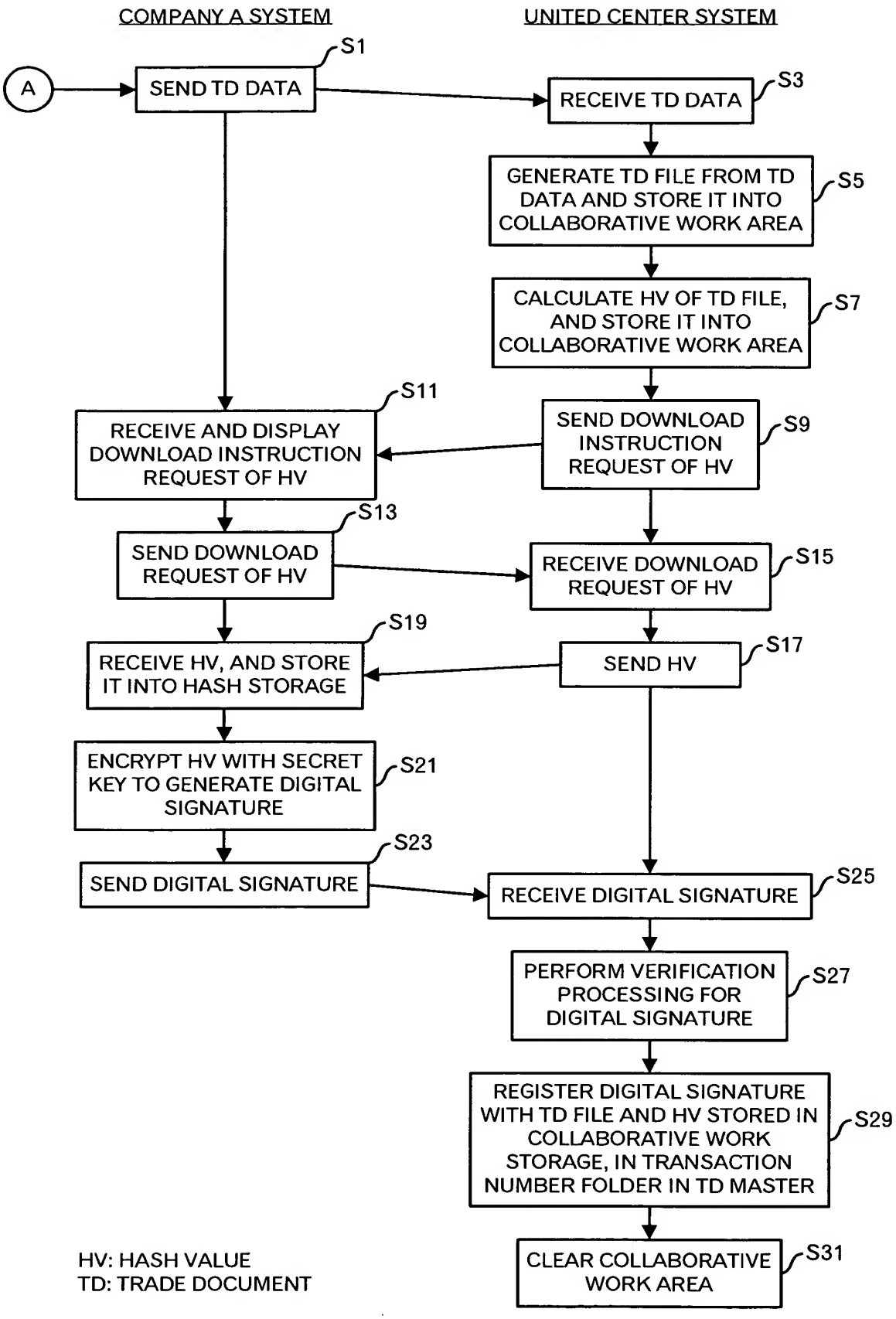

COMPANY A SYSTEM
UNITED CENTER SYSTEM
A
SEND TD DATA
S1
RECEIVE TD DATA
S3
GENERATE TD FILE FROM TD DATA AND STORE IT INTO COLLABORATIVE WORK AREA
S5
CALCULATE HV OF TD FILE, AND STORE IT INTO COLLABORATIVE WORK AREA
S7
SEND DOWNLOAD INSTRUCTION REQUEST OF HV
S9
RECEIVE AND DISPLAY DOWNLOAD INSTRUCTION REQUEST OF HV
S11
SEND DOWNLOAD REQUEST OF HV
S13
RECEIVE DOWNLOAD REQUEST OF HV
S15
SEND HV
S17
RECEIVE HV, AND STORE IT INTO HASH STORAGE
S19
ENCRYPT HV WITH SECRET KEY TO GENERATE DIGITAL SIGNATURE
S21
SEND DIGITAL SIGNATURE
S23
RECEIVE DIGITAL SIGNATURE
S25
PERFORM VERIFICATION PROCESSING FOR DIGITAL SIGNATURE
S27
REGISTER DIGITAL SIGNATURE WITH TD FILE AND HV STORED IN COLLABORATIVE WORK STORAGE, IN TRANSACTION NUMBER FOLDER IN TD MASTER
S29
CLEAR COLLABORATIVE WORK AREA
S31
HV: HASH VALUE
TD: TRADE DOCUMENT

FIG.6

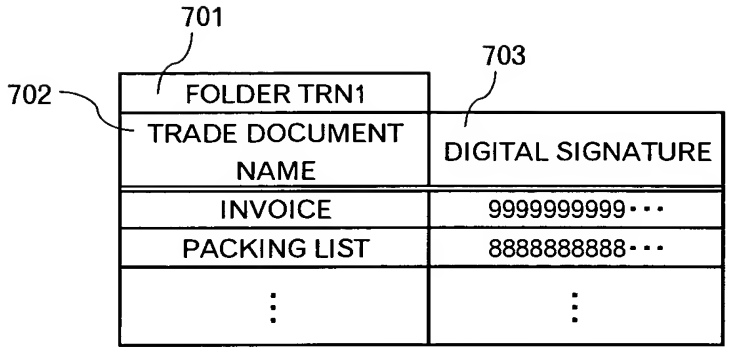
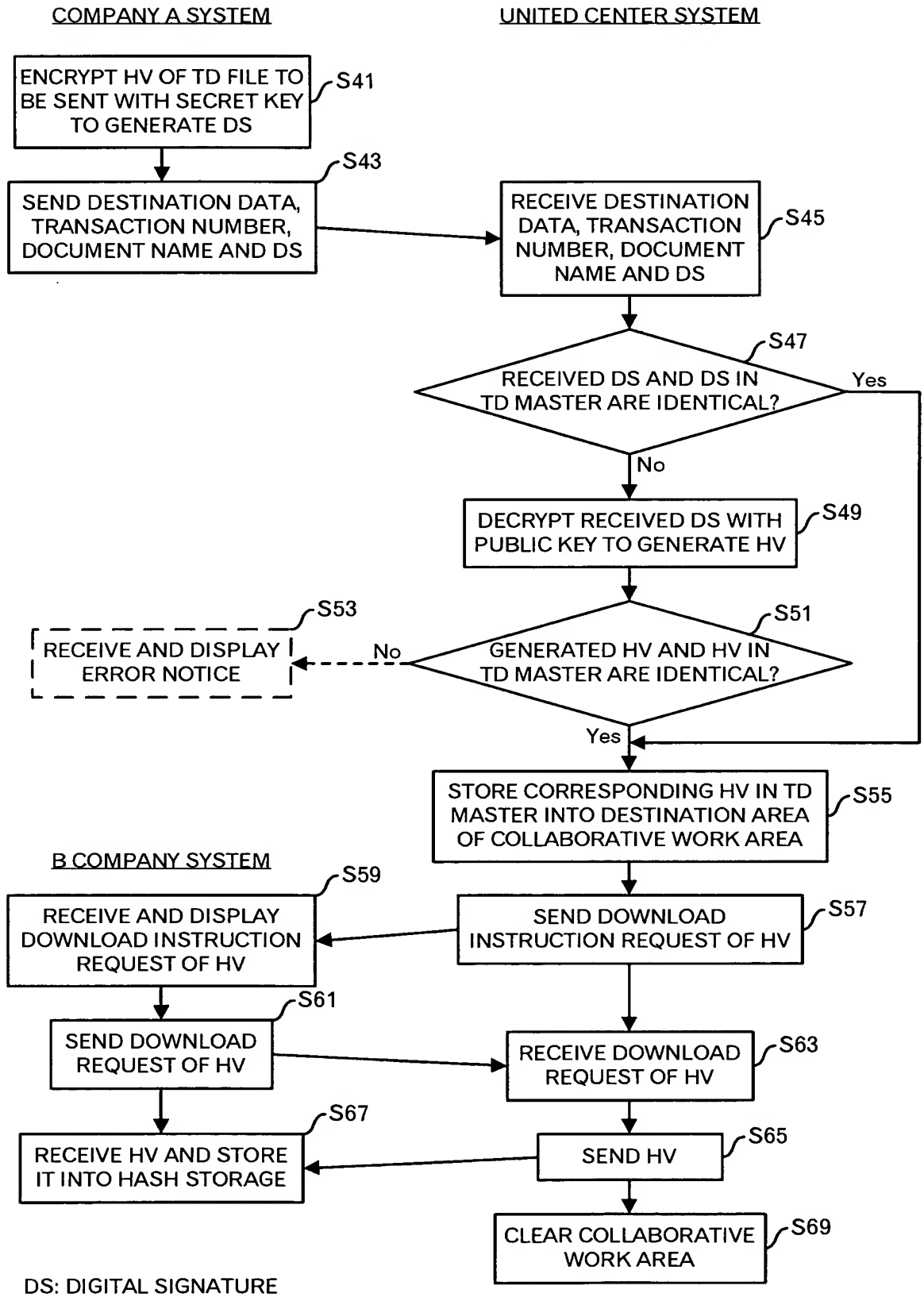

701
703
702
FOLDER TRN1
TRADE DOCUMENT NAME
DIGITAL SIGNATURE
INVOICE
9999999999・・・
PACKING LIST
8888888888・・・

FIG.7



DS: DIGITAL SIGNATURE
HV: HASH VALUE
TD: TRADE DOCUMENT

FIG.8

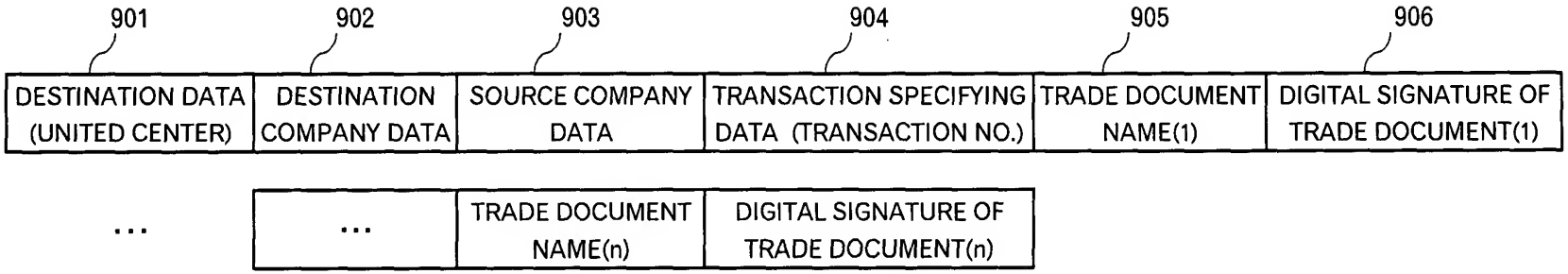

901
902
903
904
905
906
DESTINATION DATA (UNITED CENTER)
DESTINATION COMPANY DATA
SOURCE COMPANY DATA
TRANSACTION SPECIFYING DATA (TRANSACTION NO.)
TRADE DOCUMENT NAME(1)
DIGITAL SIGNATURE OF TRADE DOCUMENT(1)
...
...
TRADE DOCUMENT NAME(n)
DIGITAL SIGNATURE OF TRADE DOCUMENT(n)

FIG.9

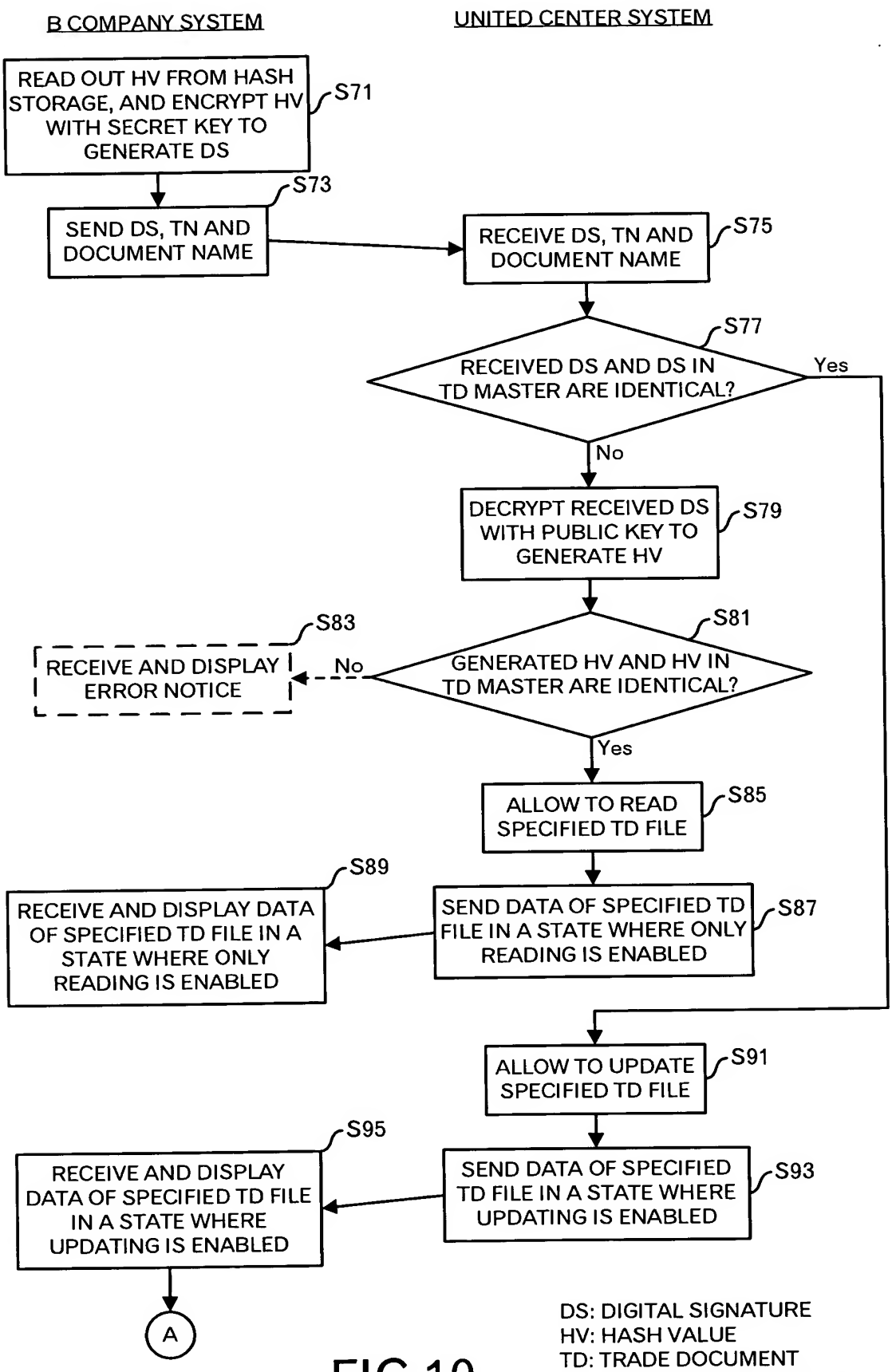


FIG.10

DS: DIGITAL SIGNATURE
HV: HASH VALUE
TD: TRADE DOCUMENT
TN: TRANSACTION NUMBER

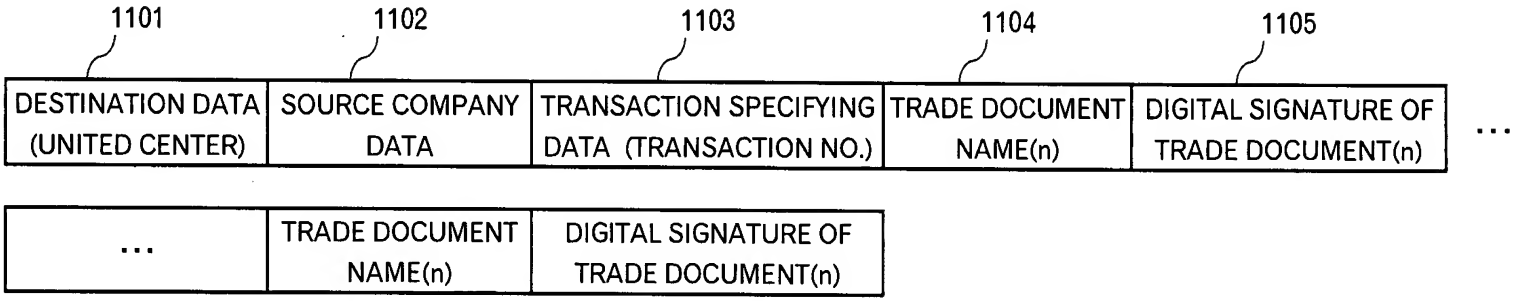

1101
1102
1103
1104
1105
DESTINATION DATA (UNITED CENTER)
SOURCE COMPANY DATA
TRANSACTION SPECIFYING DATA (TRANSACTION NO.)
TRADE DOCUMENT NAME(n)
DIGITAL SIGNATURE OF TRADE DOCUMENT(n)
...
...
TRADE DOCUMENT NAME(n)
DIGITAL SIGNATURE OF TRADE DOCUMENT(n)

FIG.11